

Appl. No. 10/708,333
Amtd. dated July 24, 2006
Reply to Office action of May 30, 2006

Amendments to the Specification:

Please replace paragraph [0004] with the following amended paragraph:

[0004] The injection compression molding technology has become mature in recent years. The injection compression molding technology combines the injection molding technology with the compression molding technology. The injection compression molding technology reduces the injection pressure required when filling the plastic into the cavity. In addition, since the pressure of the melting plastic in the cavity is equally distributed, thus a sink head or a warp problem is prevented. Therefore, the shrinkage of the product is well controlled. In light of the above-mentioned advantages, the injection compression molding technology is normally employed in fabricating optical precision moldings or compact discs. For example, if the compact disc is fabricated by conventional injection molding technology, the plastic cannot be filled completely, which is known as short shot. Thus, thin moldings having large areas, such as compact discs, cannot be formed by conventional injection molding technology. At present, the compact discs are fabricated by injection compression molding technology combining with hot runner design. Since the temperature of the plastic in the sprue is relatively higher, the short shot problem is therefore avoided. United States Pat. No. 6,464,952 6,164,952 discloses a method of fabricating DVD discs using injection compression molding technology. In this patent, an inclined angle design is adopted in the cavity for improving the fluidity of the plastic. It is possible to fabricate thin moldings having large areas (diameter:120mm; thickness:0.6mm) by injection compression molding technology. However, if thinner moldings having larger areas and being coplanar (inclined angle design is not allowed) are desired, or the pattern of the stamper is more complicated (such as the molding includes via holes), and the following problem may occur: If a single sprue method is employed, the plastic cannot be completely filled into the cavity.

Please replace paragraph [0049] with the following amended paragraph:

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- [0049] Please refer to Fig.5 to Fig.12. Fig.5 to Fig.12 are schematic diagrams illustrating steps of forming the high frequency induction heater according to the present invention. As shown in Fig.5, an aluminum substrate 24 is provided. Then a low pressure chemical vapor deposition (LPCVD) process is performed to deposit a silicon dioxide (SiO_2) layer 30 on the aluminum substrate 24 as an insulating layer. Please note that other insulating materials such as silicon nitride can also be selected as the insulating layer. The aluminum substrate 24 is selected due to its high rigidity and lower induction heating ability of high frequency comparing to iron and nickel. On the contrary, a silicon substrate is not suitable for the present invention due to its fragility.

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Please replace paragraph [0050] with the following amended paragraph:

- [0050] As shown in Fig.6, a platinum layer (not shown) is formed by depositing on the aluminum substrate 24, and a lithography process (a photo-etching process) including coating a photoresist pattern, exposing, developing, and etching is performed to form a plurality of thermometer detectors 25. Then another SiO_2 layer 30 or a silicon nitride layer is deposited to cover the thermometer detectors 25, and a chemical vapor polishing (CMP) process is performed to planarize the SiO_2 layer 30.

Please replace paragraph [0051] with the following amended paragraph:

- 20 [0051] As shown in Fig.7, a lithography process is performed to form a thick photoresist pattern 29 with high solidification strength is coated, an exposure process and a development process are performed, and then a reactive ion etching (RIE) process is performed to form a plurality of via holes 27 connecting to the thermometer detector 25. Following that, an electroforming process is perform to electroform a copper pattern (not

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shown) for forming a plurality of high frequency heating coils 26 and the plurality of via holes 27 connecting to the thermometer detectors 25. Finally, a CMP process is performed to planarize the surface.

- 5 Please replace paragraph [0052] with the following amended paragraph:
[0052] As shown in Fig.8, a lithography process is performed to form the thickness thick photoresist pattern 29 with high solidification strength is coated, and an exposure process and a development process are performed. Then an electroforming process is performed to form the plurality of via holes 27. Then, a CMP process is performed to planarize the 10 surface.

Please replace paragraph [0053] with the following amended paragraph:

- [0053] As shown in Fig.9, a lithography process is performed to form the thick 15 photoresist pattern 29 with high solidification strength is coated, an exposure process and a development process are performed, and an electroforming process is performed to form the high frequency induction heating coils 26. Then, a CMP process is performed to planarize the surface.

- 20 Please replace paragraph [0054] with the following amended paragraph:

- [0054] As shown in Fig.10, a lithography process is performed to form the thick photoresist pattern 29 with high solidification strength is coated, an exposure process and a development process are performed, and an electroforming process is performed to 25 form the high frequency induction heating coils 26 and an external power circuit terminal 28. Then, a CMP process is performed to planarize the surface.

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Please replace paragraph [0058] with the following amended paragraph:

[0058] In addition, the stamper 34 and the high frequency induction heating module 23 can be fabricated separately. In such case, after the external power circuit terminal 28 is formed-[[and]], a polishing process [[is]] can be carried out without turning over the aluminum substrate 24 [[,]] to fabricate the high frequency induction heater-is fabricated.

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